

Antenatal blood donation: Pregnant mothers' attitude, fears and preferences

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Abstract

Abstract:

Up to 150,000 pregnancy-related deaths could be avoided each year through access to safe blood. Antenatal blood donation, which will increase access to safe blood, is one of the ways to reduce maternal mortality in this environment. This study assessed the knowledge, attitude, fears and preferences of pregnant mothers regarding antenatal blood donation.

The study was carried out in Kwara State Specialist Hospital (KSSH) Sobi. All (400) consenting pregnant women accessing ANC services at the HF were recruited. Data was collected using pretested semi-structured interviewer administered questionnaire. Data analysis was done using SPSS version 17.0. A P-value < 0.05 was considered significant at 95% confidence level.

The age range of the respondents is between 16 to 42 years, with a mean age of 27.81 ± 5.21 . More than half (58.5%) of the respondents had the knowledge that blood transfusion may be required for pregnant women. Over 80% of the respondents think that the donor of blood for pregnant woman could be the spouse, the siblings, parents, in-laws or paid donor. However, majority (62.5%) would prefer blood transfusion from a family member. Risk of contracting infection was most feared among the respondents (52.5%).

There is good awareness among the study population on the possible need for blood transfusion during pregnancy and childbirth but great misconception and concerns over receiving blood transfusion still persists. There is need for continuing public education to clear misconceptions and baseless concerns over receiving blood transfusion.

Key words: Pregnant mothers, attitude, antenatal blood donation, Ilorin

Introduction

Obstetrics has been described as a "bloody business". Normal vaginal delivery is often associated with some amount of bleeding. The actual measured blood loss in uncomplicated vaginal delivery has been estimated to be about 700ml¹ and visual blood loss assessment is notoriously underestimated.^{1,2} The incidence of obstetric haemorrhage is difficult to determine because of inexact definitions.³ Some studies have however used postpartum drop in haematocrit of 10% or a need for blood transfusion following delivery in defining obstetric haemorrhage^{4,5}.

Pregnancy can be complicated by bleeding at anytime during the gestational period and beyond.³ Bleeding in the form of antenatal or post partum haemorrhage is one of the leading causes of maternal mortality worldwide. Up to 150,000 pregnancy-related deaths could be avoided each year through access to safe blood.⁶ In developed countries where hospitalization for delivery is the norm and there is availability of blood banking services, haemorrhage still remain a major cause of maternal mortality.^{3,7} The situation is even worse in the developing countries like Nigeria where up to a quarter or more maternal deaths are due to haemorrhage.^{8,9} In the developed countries, only 6% of all donated blood is used for pregnancy-related complications, while in the developing countries, 37% of donated blood is used for obstetric complications.⁶

Antenatal blood donation is one of the ways to reduce maternal mortality in this environment. Availability of blood transfusion services is very important to successful running of any modern day obstetrical services. Such modern blood transfusion services and techniques are widely available in advanced countries and this is contributory to the significant reduction in their maternal mortality.

The safest blood donors are voluntary, non-remunerated blood donors from low-risk populations.¹⁰ Voluntary blood donors are the main sources of blood donations in most of the developed countries but this is still a contentious issue in our environment where there are several misconceptions surrounding blood donation and transfusion.¹¹⁻¹² The goal of WHO is for all countries to obtain all their blood supplies from

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voluntary unpaid donors by 2020.¹⁰

Pregnant women are potential beneficiary of donated blood. Since voluntary blood donation is still uncommon with our people, compulsory antenatal blood donation by the husband or other relatives responsible for the care of the woman remain a viable option of obtaining and maintaining constant supply of blood to run maternity services in this environment. Experience over the years has been to see a pregnant woman rushed into the hospital by fellow nursing mothers or elderly relatives who may be unfit to donate blood; males / husbands are usually not immediately available. For patients needing immediate blood transfusion, delay in sourcing for donors before subsequently transfusing such patients may prove detrimental to her life. Previous studies^{14,15} on women's views and knowledge on possible need for blood transfusion in pregnancy and delivery revealed poor knowledge in this area. Another study¹⁶ on women's perception on male participation in antenatal events revealed that most women do not think their husbands need to be involved in antenatal care. This finding is of much significance if the potential beneficiaries of donated blood are not aware of it and they do not also see the need for their spouses to be involved in antenatal care.

This study assessed the knowledge, attitudes, fears and preferences of antenatal clinic attendees regarding antenatal blood donation. This study will help to elucidate the reasons for patients' attitudes to antenatal blood donation, their fears and their concerns. The information obtained thereof could possibly be a source of enlightenment on the way to improve blood availability in facilities offering comprehensive Emergency Obstetrics Care (EOC) services in Nigeria.

Subjects and method

The study was carried out in Ilorin, the capital of Kwara State, which is located within the North-Central zone of Nigeria with a distance of about 306 km north of Lagos and 500km south of Abuja, the Federal Capital Territory (FCT). There are 73 public Primary Health Care (PHC) facilities and 54 registered Private health facilities (HFs) in Ilorin. These PHCs only offer skeletal basic EOC services. There are two specialist health facilities and two cottage hospitals owned by the State Government and a Federal teaching hospital. These facilities provide full-fledged Comprehensive EOC services and serve as referral centers to the PHCs in the State.

The study was carried out in Kwara State Specialist Hospital (KSSH) Sobi which is one of the state-owned secondary HFs offering Comprehensive EOC services which include blood transfusion services and

Caesarean section amongst others. All consenting pregnant women accessing antenatal care (ANC) services at the HF were recruited into the study over a ten month period (January to October 2013).

A pretested semi-structured interviewer administered questionnaire was used to collect data on socio-demographic characteristics, knowledge, attitude, fears and preferences of ANC attendees regarding antenatal blood donation. Trained interviewers were employed to administer the questionnaire to the subjects in the hospital during ANC visit after seeking their informed consents. Ethical approval for the study was sought from the Medical Director of the hospital as well as from the Ethical Review Committee of Kwara State Ministry of Health.

The collected data were manually checked for errors, coded and entered into the computer. Analysis of data was done using SPSS version 17.0 software package. Data were presented using frequency tables and charts, and cross tabulation of important variables done. Chi-squared analysis was performed to assess the association between categorical variables. A P-value < 0.05 was considered significant at 95% confidence level.

Results

A total of 400 pregnant women were interviewed for the study. The ages of the respondents range from 16 to 42 years, with a mean age of 27.81 ± 5.21 . Majority (92.5%) of the respondents were Yoruba. About (39.2%) had secondary level of education. Majority (90.0%) were married Traders constituted 30.8% of the respondents, while a quarter (25.8%) was civil servants. The others were self-employed, unemployed, students or artisans. Almost half of the respondents were multigravida (Gravida 2-4). Many (47.8%) of the women were seen in their third trimester of pregnancy. More than half (58.5%) of the pregnant women had the knowledge that blood transfusion may be required for pregnant women. Many of the respondents became aware of antenatal blood donation through health workers (60.2%). Less than half (46%) of the women were aware of antenatal blood donation policy in certain hospitals in the country. Blood shortage was the most commonly known reason for receiving blood transfusion followed by excessive bleeding in association with pregnancy. Even though, over 80% of the women think that the donor of blood for pregnant woman could be the spouse, the siblings, parents, in-laws or paid donor, the highest vote was for the spouse. Majority (90%) of the women know that donated blood could be used to save the life of mother and baby. A minority of the women believe that donated blood was used for practical or teaching purposes in the hospital. The overall knowledge score is however good. (67%)

Table 1: Socio-demographic Characteristics of the Respondents

Variable	(N = 400) Frequency (%)
Age group (years)	
15 –20	32 (8.0)
21 – 25	113 (28.2)
26 – 30	163 (40.8)
31 – 35	54 (13.5)
36 – 40	34 (8.5)
41 – 45	4 (1.0)
Ethnicity	
Yoruba	370 (92.5)
Hausa	15 (3.8)
Igbo	4 (1.0)
Others	8 (2.0)
Level of Education	
No formal education	51 (12.8)
Primary	81 (20.2)
Secondary	157 (39.2)
Tertiary	111 (27.8)
Marital status	
Single	38 (9.5)
Married	360 (90.0)
Widowed	2 (5)
Religious Faith	
Islam	278 (69.5)
Christianity	117 (29.3)
Traditional	4 (1.0)
Other Specify	1 (0.2)
Occupation	
Civil Servant	103 (25.8)
Trader	123 (30.8)
Self Employed	51 (12.8)
Unemployed	31 (7.8)
Student	39 (9.8)
Artisan	53 (13.2)
Gravidity	
Primigravida	151 (37.8)
Multigravida (2-4)	197 (49.3)
Gradmultiparavida (5-8)	52 (12.9)
EGA	
First trimester (1-13weeks)	42 (10.5)
Second trimester (14-26 weeks)	170 (42.5)
Third trimester (27- 42 weeks)	188 (47.0)

Table 2: Awareness of Respondents on Antenatal Blood Donation

(N= 400)

Variable	Frequency (%)
Awareness of blood donation for pregnant woman	
Yes	234(58.5)
No	166(41.5)
Source (Multiple response)	
Neighbour	123 (30.8)
Health worker	103 (60.2)
Friends	51 (12.7)
Media	123 (30.8)

Table 3: Knowledge of Respondents on Antenatal Blood Donation (N= 400)

Variable	Frequency (%)
conditions requiring blood transfusion during pregnancy/delivery (multiple response)	
Spontaneous abortion	291 (72.8)
Blood shortage	354 (88.5)
Emergency Caesarian section	317 (79.2)
Bleeding (ante partum/post partum)	344 (86.0)
who should donate blood for a pregnant woman (multiple response)	
Spouse	376 (94.0)
Sibling	369 (92.2)
Parents	353 (88.2)
In-laws	323 (80.8)
Paid Donor	335 (83.8)
usefulness of donated blood (multiple response)	
to save lives of mother and foetus	360 (90.0)
to save live of baby	102 (25.5)
to save life of mother	159 (49.6)
to be kept in blood bank and sold to those in need later	127 (31.8)
for practical/ teaching of students	13 (3.3)
Knowledge Score	
Good Knowledge ()	268 (67.0)
Poor Knowledge ()	132 (33.0)

Table 4: Attitude of Respondents towards Antenatal Blood Donation (N = 400)

Variable	Frequency (%)
Preferred source of blood for transfusion	
Previously donated blood in blood bank	42 (10.5)
Direct family blood donation	163 (40.8)
Either family or blood in blood bank is okay by me	174 (43.5)
I do not want blood at all	21 (5.2)
Can you encourage your spouse to donate blood on your behalf?	
Yes	358 (89.5)
No	42 (10.5)
Can you encourage other family members to donate blood on your behalf?	
Yes	335 (83.8)
No	65 (16.2)
Will you be willing to donate blood if not pregnant?	
Yes	347 (86.8)
No	53 (13.2)

Table 5: Fears entertained by respondents towards Antenatal Blood transfusion (N = 400)

Variable	Frequency (%)
Fears in receiving Blood transfusion (multiple response)	
It's like death sentence	87 (21.8)
Risk of contracting infections	210 (52.5)
Spiritual Implications	111 (27.8)
Blood from unknown person	173 (43.2)
Transfusion against my religion	44 (11.0)
Transfusion against my tradition	55 (13.8)

More than half (62.5%) of the respondents would prefer blood transfusion from a family member while 10.5% would prefer a previously donated blood in the hospital blood bank. Most (90%) of the women could encourage their husbands to come and donate blood. Majority (83.8%) of the women had relatives they could easily call upon to donate blood on their behalves. The husband is the most likely person to easily donate blood for women in the study group. Other notable likely donors were the bother (8.5%), father (4.8%), mother (4.3%) and sister (3.8%), while uncle, friends, in-laws and 'nobody' constituted the remaining minority.

Risk of contracting infection was most feared among the respondents (52.5%). Other fears are those of spiritual implications (27.8%), blood transfusion been against culture/religion (11%/13.8%) and some others regarded blood transfusion news as a death sentence (21.8%).

Only 10.5% of the respondents had ever received blood transfusion in relation to pregnancy in the past. Of those who had received blood transfusion, paid donor was the most common (23.8%) source of such blood donation followed by the spouse and then their relatives.

Discussion

In this study, the ages of the respondents ranged from 16-42 years with a mean of 27.8 ± 5.21 . Over two-thirds of them had at least, a secondary school level of education. Only 10% of them were seen in the first trimester of pregnancy, reflecting late booking that is common in this environment.¹⁷

More than half of the women knew that pregnancy could be complicated by a need for blood transfusion. This was similar though, slightly lower than the proportion of women in the neighbouring tertiary centre¹⁸ where 79% of the women in a similar study knew that pregnancy could be complicated by a need for blood transfusion. The reason for this difference may be due to the fact that more educated women attend antenatal clinics in the tertiary centre than the study location which is a secondary health centre. This finding was, however, different from that found in the United Kingdom UK¹⁴ and

Table 6: Respondents' blood transfusion experience**(N = 400)**

Variable	Frequency (%)
Ever Received Blood in Pregnancy	
Yes	42 (10.5)
No	358 (89.5)
Who donated the blood you received in pregnancy (n= 42)	
Husband	18 (42.9)
Relatives	5 (11.9)
Paid Donor	10 (23.8)
Blood Bank	5 (11.9)
Others	4 (9.5)
How many times were you transfused (n=42)	
Once	25 (59.5)
Twice	7 (40.5)
How many pints of blood did you receive (n=42)	
One	16 (38.1)
Two	17 (40.5)
Three	7 (16.7)
Four	2 (4.7)
Reason for the blood transfusion you received(n=42)	
Blood shortage (anaemia)	3 (7.1)
Miscarriage (abortion)	9 (21.4)
Caesarean section	4 (9.6)
Post partum bleeding (PPH)	19 (45.2)
Retained placenta	3 (7.1)
Illness in pregnancy	2 (4.8)
Ectopic pregnancy	1 (2.4)
Multiple gestation	1 (2.4)

Table7: The most likely person that respondents' think can donate on their behalf
N= 400

Variable	Frequency (%)
father	19 (4.8)
Husband	292 (73.0)
mother	17(4.3)
brother	34 (8.5)
sister	15 (3.8)
Uncle	10 (2.5)
In-laws	2 (0.4)
Friends	1 (0.2)
Nobody	10 (2.5)

Regression analysis on mothers
Variables in the Equation

							95.0% C.I. for EXP(B)	
	B	S.E.	Wald	Df	Sig.	Exp(B)	Lower	Upper
Step 1 ^a Age	.024	.037	.402	1	.526	1.024	.952	1.101
GRAVIDITY	.031	.125	.062	1	.803	1.032	.808	1.317
HIGHEST EDUCATION	-.099	.133	.554	1	.457	.906	.698	1.176
RELIGIOUS FAITH	-.199	.477	.174	1	.676	.819	.322	2.086
Constant	-2.038	1.113	3.355	1	.067	.130		

a. Variable(s) entered on step 1: Age, GRAVIDITY, HIGHEST EDUCATION, RELIGIOUS FAITH.

Jordan¹⁵ were over half of the antenatal attendees were not aware of the possible need for blood transfusion in connection with pregnancy and childbirth. The reason for this may be due to the very low maternal mortality in these areas which makes their women unfamiliar with possible dangers associated with pregnancy. However, similar to the UK study, health workers, the media and friends/relations were the sources of information for those who knew.

Anaemia, shock from post partum haemorrhage and antepartum haemorrhage were the leading indications for obstetric blood transfusion in a tertiary centre in South-East Nigeria.¹⁹ Over two-thirds of the respondents knew that abortions, blood shortage, operative deliveries and bleeding during or after delivery were conditions that may necessitate blood transfusion in pregnant women. The high level of awareness of operative delivery as a possible indication for blood transfusion was similar to the finding in Ghana where majority of their women are knowledgeable on caesarean section.²⁰

Some hospitals in Nigeria have instituted compulsory antenatal blood donations as a policy.¹⁸ More than half of the women studied have never heard of such a policy. Majority of the women believed that their spouses are the most likely persons to donate blood for them in time of need. Other likely potential donors include their brothers, fathers and sisters, in decreasing order of importance. Some women claimed they have no one whatsoever to come to their aid in terms of blood donation. Hence there is need to encourage husbands to accompany their wives to antenatal care. So that husbands can be well informed and thus participate actively in their spouses' ANC programmes. This practice is currently seen as absurd in this environment. Blood transfusion is to save the life of the mother, baby or both. This was well known by majority of the women. About a third of the women however think that the donated blood is being used for other purposes such as being sold for profit by the blood bank staff or that such blood is used for practical teaching in the hospital. This crucial misconception needs be clarified in order not to dissuade future potential donors. Several studies²¹⁻²³ have highlighted similar misconceptions regarding blood donations from potential donors.

The risk of contracting infections was the most feared reason for not wanting to accept blood transfusion. This fear is quite justified from several studies^{24,25} that have shown that transmission of infectious agents do occur in clinical practice even in the developed countries. The risk of transmission of blood-borne pathogens is much higher in resource-constrained countries like Nigeria.²⁶ Hence, the wisdom of compulsory screening of voluntary blood donor for

blood-borne infections prior to donation. Fear of the blood being from an unknown person, spiritual implications of receiving someone else's blood, cultural and religious reasons as well as seeing the need for blood transfusion as a death sentence were the other reasons of concern over blood transfusion in the women studied. Similar concerns have been shown by some other authors^{21,22} as reasons for refusal to accept blood transfusion or blood donation in this environment. All these show the need for further public enlightenment on blood transfusion.

Majority of the women would prefer blood from a relative while a lesser number do not mind the source of blood to be transfused into them as long as their healthcare giver can guarantee safety. This preference probably resulted from above mentioned fears and concerns. However, of the 10.5% women who had ever being transfused from previous pregnancy complications, less than half of them had their husbands being the donor. This reflects the fact that most husbands would be reluctant to donate for their wives but would rather buy blood for them or persuade other relatives to do so. This is so partly because most husbands are not being carried along antenatal care ab initio only for them to just get summoned to come and donate blood. Again, because of lack of male involvement in antenatal care, most husbands do not know that they are in the best position to donate for their spouses in time of need. Several studies^{22,27} have shown that voluntary blood donation is uncommon in this environment and people will only donate blood whenever they have something to gain from the act.

Conclusion: There is good awareness among the study population on the possible need for blood transfusion during pregnancy and childbirth but great misconception and concerns over receiving blood transfusion still persists. The pregnant women's spouses are believed to be available for emergency blood donation but in actual facts, paid donors are commonly the source of blood donations in emergency situations. There is the need for continuing public education to clear misconceptions and baseless concerns over receiving blood transfusion. The involvement of the spouse in antenatal care is advocated.

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